



## DELIVERABLE: D26 - D4.6

**Second Seminar with Public Administration, Owners,  
Tenants and Building Administrators**

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Authors: University of Zagreb, Faculty of Civil Engineering**

**Network for Using BIM to Increase the Energy Performance**

**Grant Agreement Number: 754016  
Net-UBIEP H2020**

**August 2019**

This deliverable reflects only the author's view. The Agency is not responsible for any use that may be made of the information it contains.





## Contents

<b>A. Deliverable Details</b> .....	3
<b>B. Short description</b> .....	4
<b>1. Learning outcomes and training programme</b> .....	5
<b>2. Conducted courses</b> .....	6
2.1 Croatia .....	6
2.1.1 Course description and results.....	6
2.1.2 Agenda.....	7
2.2 Estonia .....	8
2.2.1 Course description and results.....	8
2.2.2 Agenda.....	9
2.3 Italy.....	11
2.3.1 Course description and results.....	11
2.3.2 Agenda.....	17
2.4 Lithuania .....	18
2.4.1 Course description and results.....	18
2.4.2 Agenda.....	20
2.5 Slovakia.....	20
2.5.1 Course description and results.....	20
2.5.2 Agenda.....	28
2.6 Spain .....	29
2.6.1 Course description and results.....	29
2.1.2 Agenda.....	29
2.7 The Netherlands.....	30
2.7.1 Course description and results.....	30
2.7.2 Agenda.....	31



### A. Deliverable Details

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<b>Version Number:</b>	4
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<b>Author(s):</b>	University of Zagreb, Faculty of Civil Engineering
<b>Contributors:</b>	All the partners
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<b>Type of deliverable</b>	Other
<b>Format</b>	Report
<b>Dissemination Level:</b>	Public



## B. Short description

The goal of this report is to provide an overview of the **Second Seminar with Public Administration, Owners, Tenants and Building Administrators**.

The main objectives that were pursued through seminars are:

1. Introduce Public Administration and Owners/Tenants/Building Administrator on the importance of having reliable information when designing and managing a building.
2. Help Public Administration and Owners/Tenants/Building Administrator to define the requirements of BIM model.
3. Develop a strategy for implementing BIM with the local stakeholders.

Validation of BIM Qualification Models and training materials was implemented in each partner country by the partners with more experience in training activities such as Universities and Training Centres. Mainly one partner per country organised and performed training, and these were as follows: ENEA (IT), FLC (ES), TUT (EE), FCE (HR), Dig.Con. (LT), ISSO (NL), ViaEU (SK).

Second Seminar with Public Administration, Owners, Tenants and Building Administrators were conducted in national languages Croatian, Dutch, Estonian, Italian, Latvian, Slovak, Spanish. Validation of training material and assessment for **Public Administration, Owners, Tenants and Building Administrators** on how to use BIM for the energy performance was conducted during classroom courses using questionnaires.

Questionnaire tailored for **training participants** were prepared (*D27-D4.7 Survey and or interview among all different Targets*) in order to validate defined competence lists for **Public Administration, Owners, Tenants and Building Administrators** as well as trainee satisfaction with course and instructor (trainer) effectiveness. **Training participants** were asked to judge on their competences **before the training as well as after the training**.

Good quality practices of education are based on these three pillars:

- clear definitions of learning outcomes,
- design and structure of the programme course,
- evaluation and monitoring of the learning outcomes

**Two types of questionnaires** were used to cover these three pillars of good education and to simultaneously perform a self-assessment of competences gained by the participants during the course.

The purpose of the **“Pre training questionnaire”** was to assess initial level of knowledge, experience and current practices regarding BIM. **“Post training questionnaire”** contains the same or similar questions as a “Pre training questionnaire” which serve to determine in simple ways the progress training participants have made during the courses and efficiency of the courses. Questions about the completeness or redundancy of the foreseen schemes and training courses were also included in the “Post training questionnaires”.

The main goal of this report is to provide information for future activities, based on the experience during the Net-UBIEP project. Therefore, this report will present the overview of the conducted classroom courses and will set guidelines for the learning outcomes (also project deliverable *D4.8 Review of the three dimensional matrix*), the evaluation of the courses, and finally will also enable experience exchange between the different training institutions.

The report does not contain sensitive information and the collected data is being treated confidentially following the rules of General Data Protection Regulation 2016/679.

## 1. Learning outcomes and training programme

Both learning outcomes and training programme were explored and defined in details in previous project activities. All the partners followed the learning outcomes defined in deliverables *D14 - D3.1 Three-dimensional Matrix* and *D15 - D3.2 Requirement for learning outcomes* as well as the training materials developed as deliverables *D16 - D3.3 Multimedia Handbook for Public Administration on BIM* and *D17 - D3.4 Multimedia Handbook for Owners, Tenants and Building Administrators*.

Therefore, in this chapter a summary of the main information is presented, as detailed information can be found in the respective Deliverables.

The classroom courses followed somewhat different structure in every partner country but as mentioned before have always included all the learning outcomes and training content defined in respective deliverables. Additionally, each respective partner developed their own training aids (i.e. power point presentations, etc.) which then followed their course structure. In general, partners analysed advantages and deficiencies of different approach of others and their own experiences gained through First Seminar with Public Administration, Owners, Tenants and Building Administrators. The result was slightly evolved approach of partners for the Second Seminar with Public Administration, Owners, Tenants and Building Administrators.

Partners used different systems for validation of training courses, but all using the questionnaires developed for this purpose in *D27-D4.7 Survey and or interview among all different Targets*. Some countries used GoogleForms, other partners used free web based voting solution (VoxVote) for interactive presentations and real time feedback from the course participants, BIMSync (CDE) platform was also used to evaluate training, while the fourth option was to use hardcopy questionnaires. The participants filled questionnaires anonymously during classroom courses in order to get their honest opinion and validation.

Table 1 Overview of Second Seminar with Public Administration, Owners, Tenants and Building Administrators duration training methodology and number of participants

Partners country	Course date	Classroom course duration	Theoretical (T) / Practical (P)	No. of participants	Voting system
Croatia	15 January 2019	8 hours	T	14	-
Estonia	23 October 2018 5&15 November 2018	8 hours	T	21+13+40=74	-
Italy	18 July 2019	4 hours	T	38	GoogleForms
Lithuania	4 April 2019	4 hours	T	38	-
Slovakia	25 April 2019	6 hours	T	13	GoogleForms
Spain	17 October 2018	6 hours	T	24	-
The Netherlands	6 November 2019	3 hours	T	10	-
			Total No. of participants	211	



## 2. Conducted courses

### 2.1 Croatia

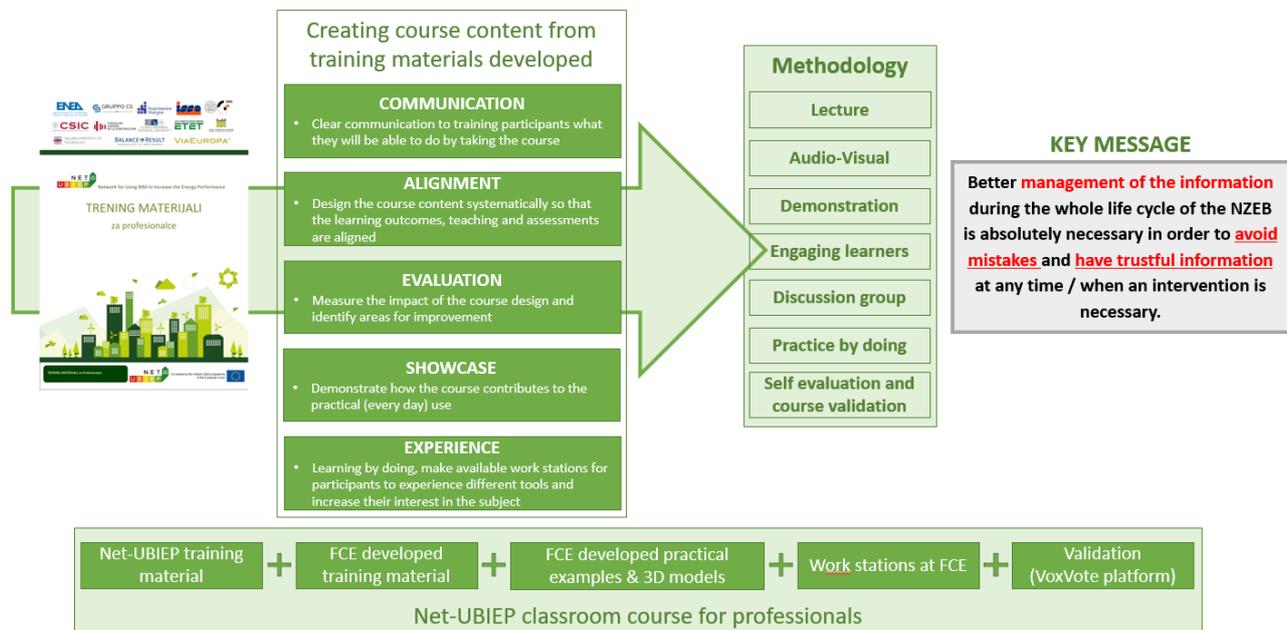
#### 2.1.1 Course description and results

Second Seminar with Public Administration, Owners, Tenants and Building Administrators was organized on **January 15<sup>th</sup> 2019** in Zagreb, Croatia. The course was held specifically for the Croatian Ministry of Construction and Physical Planning.

The course programme consisted of 8 academic hours of theoretical lectures with application examples (case studies) but with no practical tasks.

A group of **14 participants** which work in public administration (in the Ministry of Construction and Physical Planning) had undertaken the classroom course in Croatia within the framework of the Net-UBIEP project.

The overview of the content development and methodological basis of the classroom courses is shown in the figure below.



Several photos from the Second Seminar with Public Administration, Owners, Tenants and Building Administrators conducted by the FCE can be found below.



Pre- and Post-training questionnaires were translated to Croatian language. The participants of the Second Seminar with Public Administration, Owners, Tenants and Building Administrators sadly did not fill any of the questionnaires prepared for them as this was the prerequisite of the Ministry of Construction and Physical Planning. Since it was deemed by the FCE that it is of higher value for the Net-UBIEP project and BIM implementation in Croatia in general to conduct the training course for the employers of the Ministry, we agreed not to pursue the questionnaires for this specific course.

For the reason of lacking post-training questionnaire results, validation of this specific classroom course cannot be completed.

Analysis of the training results, problems and solutions together with lessons learned during the courses are as follows:

- A model of trainings for BIM has been developed, combining theoretical part with application examples (case studies) and without practical session using BIM tools.
- The duration of trainings – 8 hours. Participants of the trainings have confirmed that duration is appropriate but approximately the same number of participants asked for shorter training duration.

Comments and suggestions of the training participants could be summarised in the following few lines:

- The classroom course participants seek for more practical lessons and tasks, more examples of good practice focused on e-permits and model checking.

### 2.1.2 Agenda



#### BIM za djelatnike javne uprave i vlasnike (upravitelje zgradama)

##### Besplatna radionica

Održavanje: 15.01.2019.

Mjesto održavanja: Ministarstvo graditeljstva i prostornog uređenja, Republike Austrije 14, 10000 Zagreb, Velika dvorana

##### Kontakt osoba:

- Mergim Gaši, Građevinski fakultet Zagreb,
- Tel: +385 1 4639 121
- [mgasi@grad.hr](mailto:mgasi@grad.hr)

Prijavni obrazac: <http://www.net-ubiep.eu/hr/registracija-2/>

Sat	Tema	Predavač
9.00 – 9.30	Uvodno o projektu Net-UBIEP Zašto korištenje BIM-a može poboljšati energetske učinkovitost u zgradarstvu	Ivana Burcar Dunović
9.30 – 9.45	Diskusija – pre-training upitnici	Ivana Burcar Dunović
09.45 – 10.30	Uvodni modul – osnovna BIM znanja i vještine • Uvod: što je BIM? • BIM Rječnik – osnovni pojmovi • Prednosti i cijena korištenja BIM-a u različite svrhe • Povrat na investiciju (ROI) • Standardi koji podupiru BIM proces • Diskusija	Ivana Burcar Dunović
10.30 - 10.45	Pauza	
10.45 – 11.30	Modul 1 – Difuzija BIM-a • Otvoreni BIM alati i standardni format • BIM uloge i odgovornosti • Dimenzije BIM-a o 4D, 5D, 6D, 7D • Diskusija	Ivana Burcar Dunović



11.30 – 12.15	Modul 2 – Primjena BIM-a za upravljanje podacima • Načela upravljanja podacima u zajedničkom okruženju podataka - CDE (Okolina za razmjenu podataka) • Negrafičke informacije u BIM modelu zgrade • Plan održavanja zgrade i ugovaranje energetske usluge • BIM Model izvedenog stanja (eng. "as built") za poboljšanje energetske učinkovitosti zgrada • Diskusija	Mergim Gaši
12.15 – 13.00	Ručak	
13.00 – 13.45	Modul 3 – Primjena BIM-a za upravljanje nabavom • BIM i ugovaranje • BIM u javnoj nabavi • BEP (BIM Plan Izvršenja) • Indeks zrelosti informacija • Suradnja među sudionicima u gradnji • Diskusija	Ivana Burcar Dunović
13.45 – 14.45	Modul 4 – Korištenje BIM tehnologije Modul 5 – Analiza BIM modela • Održivi građevinski sektor o Energetska učinkovitost o Zelena gradnja • Automatizirana kontrola modela o Procjena sukladnosti s propisima o Otkrivanje kolizija • BIM za upravljanje kvalitetom • BIM za primopredaju i održavanje (as built model) • Diskusija	Marina Bagarić
14.45 – 15.00	Pauza	
15.00 – 16.00	Demonstracija rada s OpenBIM alatima: • Rad na BIM modelima, kontrola preklapanja; • BIM model tijekom korištenja zgrade (energetska učinkovitost, održavanje zgrade) • Pregled i odobrenje izmjena modela od strane različitih suradnika • Diskusija	Sanjin Gumbarević
16.00 – 16.15	Diskusija – post-training upitnici • Validacija razvijenih trening materijala	Ivana Burcar Dunović



## 2.2 Estonia

### 2.2.1 Course description and results

Estonian partners decided to organise training courses specifically aiming at different target groups, thus they organised four different events where for Public Administration they intended two seminars (**Public Administration Seminar held on 22.10.2018 and Public Administration Handbooks held on 15.03.2019**) with **43 and 52 participants respectively**. Two events which targeted Owners, Tenants and Building Administrators were held on **23.10.2018 (Tenants Seminar) and 5.11.2018 and 15.11.2018 (Tenants Handbooks)** with **21, 13 and 40 participants respectively**.

8

In this report, seminars intended for Owners, Tenants and Building Administrators will be analysed. Tenants Seminar was organised on **October 23<sup>rd</sup>, 2018** (8 hours) while Tenants Handbooks events were held on **November 5<sup>th</sup> and 15<sup>th</sup> 2018** (8 hours) in Tallinn, Estonia.

The course programme consisted of 8 academic hours of theoretical lectures with application examples (case studies) but with no practical work.

The duration of 8 hours of the classroom course focused on the following topics:

- Introduction to energy efficiency
- Designed and measured energy use
- Introduction to BIM
- BIM Strategy
- BIM and energy efficiency in design and construction procurement
- Applying BIM models for building permit and permit
- How do I check the power efficiency level based on the BIM model and energy label information?

Several images from the Tenants Handbooks course conducted by the **TUT** can be found here (5.11.2018 above, 15.11.2018 below).





Pre- and Post-training questionnaires were translated to Estonian language but only pre-training questionnaire was filled by training participants. For the reason of lacking post-training questionnaire results validation of this specific classroom course cannot be completed.

### 2.2.2 Agenda

The agenda for Tenants Seminar held on 23.10.2018.



Hoonete energiatõhususe tagamine BIM'i abil  
koolitus kohalikele omavalitsustele, tellijatele ja  
omanikele, kinnisvara hooldajatele ja halduritele

#### Üldinformatsioon

Kuupäev ja aeg: 22. ja 23. oktoober 2018 kell 10:00 - 17:30

Asukoht: Tallinna Tehnikaülikool, Ehitajate tee 5, ruum U05 409

#### Päevakava

Aeg	Koolitaja	Teema
10:00-10:45	Targo Kalamees	<b>Sissejuhatus energiatõhususse</b> <ul style="list-style-type: none"> <li>H/A, ETA, KEK</li> <li>Mida tulevik toob?</li> <li>Energiatõhususe hindamine ehitusloa ja kasutusloa taotlemise staadiumis</li> <li>Energiatõhususe kavandamine hoone projekteerimisel</li> <li>Ehitusprojekti ja ehitamise kvaliteedi mõju energia tõhususele</li> </ul>
10:45-11:30	Anti Hamburg	<b>Projekteeritud ja mõõdetud energiakasutus</b> <ul style="list-style-type: none"> <li>Kuidas märgist lugeda?</li> <li>Uushooned</li> <li>Hoonete renoveerimine</li> </ul>
11:30-11:45		<b>Paus 15 minutit</b>
11:45-13:15	Raido Puust	<b>Sissejuhatus BIM-i</b> <ul style="list-style-type: none"> <li>Terminid, printsiibid, protsessi kirjeldus</li> <li>BIM versus CAD</li> <li>Mudelite erinevad staadiumid ja detailsused</li> <li>BIM versus traditsiooniline projekti teostus</li> </ul>
13:15-14:15		<b>Lõuna 1 tund</b>

14:15-15:45	Ergo Pikas	<b>BIM Strateegia:</b> <ul style="list-style-type: none"> <li>BIM projekti eesmärgid ja kasutusosalad,</li> <li>BIM rakendamine projektis ja organisatsioonis,</li> <li>Avatud BIM koostalitlusvõime põhimõtted,</li> <li>BIM standardid ja juhendid</li> <li>BIM nõuded ja praktika erinevates etappides: <ul style="list-style-type: none"> <li>Projekteerimise eelne tegevus (n. arh. konkursid, esmasd skussid, vajaduste kirjeldus, konseptsiooni väljatöötamine jne)</li> <li>Projekteerimine, Ehitamine, Järelevalve</li> <li>Kasutus,</li> <li>Lammutus</li> <li>Näited parimast/halvimast teooriast ja parimast/halvimast praktikast</li> </ul> </li> </ul>
	Ergo Pikas Targo Kalamees	<b>BIM ja energiatõhusus projekteerimise ja ehitamise hankes</b> <ul style="list-style-type: none"> <li>Nõuded hankes mudeldamisele, lõpptulemusele</li> <li>Nõuded pädevatele isikutele (kutsed)</li> <li>Mudeli kontroll ja üleandmine</li> </ul>
15:45 – 16:00		<b>Paus 15 minutit</b>
16:00-16:45	Raido Puust	<b>BIM mudelite rakendamine ehitusloa ja kasutusloa väljastamisel:</b> <ul style="list-style-type: none"> <li>Tarkvarad, failiformaadid, info ülekanne ühest BIMist teise</li> <li>Mudelitega töötamine,</li> <li>Mudelitest navigeerimine,</li> <li>Mudeli ehitusteabe lugemine ja mudelist uue ehitusteabe tuletamine (pindalad,</li> <li>Akna pindala, piirdetarindite pindala</li> <li>Hoone osade omadused: soojusläbivus, materjalikihtide paksumused, materjalide omadused</li> </ul>
16:45-17:30	Anti Hamburg	<b>Kuidas BIM mudeli ja energiamärgise info alusel kontrollida energiatõhususe suurusjärku?</b> <ul style="list-style-type: none"> <li>Soojuskaod –kütteenergiakulu suhe</li> <li>Soojusläbivus (soojuslikult homogeenne, soojuslikult mittehomogeenne)</li> <li>Taastuenergia tootmine (kalle, orientatsioon, varjud)</li> <li>Info ülekanne BIMist energiatõhususe tarkvarasse</li> </ul>
17:30-17:40		<b>Test</b>

The agenda for the Tenants Handbooks held on 5.11.2018.





Eesti taasiseseisvumisest möödub 27 aastat ja timmitud ehituse kontseptsiooni esitlemisest 25 aastat. Kui lugeda ühe inim põlve kestuseks 25 aastat, siis kujundlikult on ehituses algamas uue generatsiooni aeg. See lõttu on paras aeg teha tagasivaade sellele, milline oli ehitussektor taasiseseisvumise algusaegadel, milline on see käesoleval hetkel ja mida oodata järgmiselt 25 aastalt. Sajandivanusteks on saanud ka meie konverentside suursponsorid TTÜ ja TTK.

Erinevalt eelmistest aastatest oleme Kaasaegse Ehituse Meelodid X juubelaasta puhul konverentsi kestuseks plaaniinud kaks päeva. Esimene päev on praktiline – sellele on kavandatud kolm teemat, mille käigus õpetatakse osalejatele praktilisi oskusi ja teadmisi timmitud ehituse, BIM ja jätkusuutlikkuse teemadel. Teine päev on tavaparselt konverentsi vormis, kus arutleme ehitussektori arengute teemadel. Oleme kutsunud esinejaid kaasa mõtlema Eestist, UK-st, USA-st, Taanist ja Soomest. Kutsume ka teid kaasa mõtlema MTÜ ETET künnendal juubelikonverentsil. Peatse kohtumiseni!

## Töötoad

Version: 25.09.2018

### Üldinformatsioon

Kuupäev ja aeg: 5. november 2018 kella 9:00-st 16:30-ni

Asukoht: TalTech

### Päevakava

Aeg	Timmitud Ehitus	BIM	BIM ja energiatõhusus
9:00-10:30	Ergo Pikas: Timmitud projektijuhtimine	Bhargav Dave: Visilean rakendus ehitusjuhtimiseks	Raido Puust: BIM ja energiatõhusus
<b>Paus 15 minutit</b>			
10:45-12:15	Ergo Pikas: Timmitud projektijuhtimine	Bhargav Dave: Visilean rakendus ehitusjuhtimiseks	Raido Puust: BIM ja energiatõhusus
<b>Lõuna 60 minutit</b>			
13:15-14:45	Viimase plaanija süsteem	Arucad Süsteemid: Parameetiline BIM modelleerimine: Revit ja Dynamo	Raido Puust: BIM ja energiatõhusus
<b>Paus 15 minutit</b>			
15:00-16:30	Viimase plaanija süsteem	Arucad Süsteemid: Parameetiline BIM modelleerimine: Revit ja Dynamo	Raido Puust: BIM ja energiatõhusus



### Osavõtutasu 60€

Tudengitele erandeid ei tehta  
Kõhtade arv on piiratud  
Sisaldab tootlustamist

The agenda for the Tenants Handbooks held on 15.11.2018.



## TALTECHI ÕPPETUNNID ÜHISELAMU RENOVEERIMISEL LIGINULLENERGIA HOONEKS

### Üldinformatsioon

Kuupäev ja aeg: 15. november 2018 kell 10:00 - 16:00

Asukoht: Tallinna Tehnikakool, renoveerimislahenduste showruum, Akadeemia tee 5A, ruum U05 409

### Päevakava

Aeg	Koolitaja	Teema
10:00-11:00	Martin Thalfeldt	<b>Hoonete kavandamine energiasimulatsioonide abil:</b> Tänapäevase hoonete projekteerimisprotsessi lahutamatu osa on ka dünaamiliste energiasimulatsioonide koostamine ning nende tulemuste tõlgendamine. Martin Thalfeldt on olnud TalTechis selle valdkonna suurim eestvedaja ning koolitusel on ta valmis oma kogemusi ka teistega jagama.
11:00-12:00	Anti Hamburg	<b>Projekteeritud ja mõõdetud energia kulu:</b> Kas projekteeritud ning realselt mõõdetud energiakulud ühtivad? Anti Hamburg, kes on selle temaatikaga aastaid tegeleunud, annab sellele küsimusele vastuse.
12:00-13:00	Alo Mikola	<b>Ventilatsiooni renoveerimine kortermajades:</b> Vanade hoonete puhul tähendab ventilatsioonisüsteemide renoveerimine üldjuhul uue kaasegse süsteemi ehitamist. TalTech hoonete sisekliima ja veetehnika programmijuht Alo Mikola annab koolitusel ülevaate oma nägemuse sellest protsessist.
13:15-14:15		<b>Lõuna 1 tund</b>
14:00-15:00	Alo Mikola ja Kalle Kuusk	Ekskursioon Akadeemia tee 2 ühiselamus, kus näidatakse liginullenergia tehnosüsteeme ja antke ülevaade lokaalse taastuvenergia tootmisest. Lisaks räägitakse lahti TalTech Akadeemia tee 5a liginullenergia ühiselamu renoveerimise protsess ja selle teostumine.



## 2.3 Italy

### 2.3.1 Course description and results

Second Seminar with Public Administration, Owners, Tenants and Building Administrators was organized on **July 18<sup>th</sup> 2019** in Messina, Italy.

The course programme consisted of 4 academic hours of theoretical lectures.

A group of **38 participants** in Messina which work in public administration, public officers, had undertaken the classroom course in Italy within the framework of the Net-UBIEP project.

The overview of lectures held at the 2<sup>nd</sup> classroom course is shown below.

- Building information modelling as a tool for the sustainability of our cities.
- The Data Sharing Environment (ACDat) for managing the information flow of the BIM process
- Application of BIM in energy performance and property management contracts to reduce consumption and produce energy from renewable sources integrated in the building.
- Focus on the training the public administration as foreseen by the ministerial decree with in order to adopting the BIM method for the management of public tenders.
- Good practices of using BIM in local municipalities.

11

Several photos from the Second Seminar with Public Administration, Owners, Tenants and Building Administrators conducted by **ENEA** can be found bellow.



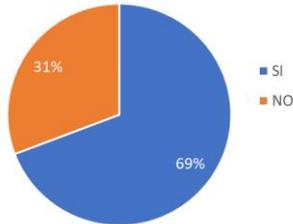
Pre- and Post-training questionnaires were translated to Italian language and filled by training participants, using the google form app created in order to facilitate the filling.

Few general conclusions of the classroom course validation from the participants in Italy is given below, while the entire questionnaire analysis is performed in deliverable *D27-D4.7 Survey and or interview among all different Targets*. Due to the fact that validation was performed in partners' native language, the analysis below has both English questions and the same questions in native language.

1. Do You or Your company/organization currently use BIM, or is it intending to use BIM in the near future?
  - a) Yes
  - b) No



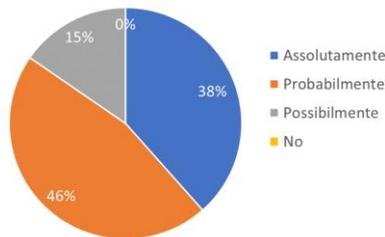
1. La sua società già lavora in ambiente BIM o intende farlo nel futuro prossimo? \*



15. Would BIM certification, support or training, benefit Your colleagues?

- a) Absolutely
- b) Likely
- c) Possibly
- d) No

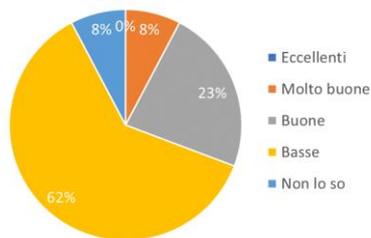
15. La certificazione BIM, il supporto o la formazione sarebbero utili a lei o ai suoi colleghi?



18. In retrospective, how do You rate Your competences (knowledge, skills, responsibility and autonomy) before this BIM course?

- a) Excellent
- b) Very good
- c) Good
- d) Little
- e) I don't know

18. Come valuti le tue competenze (conoscenze, abilità, responsabilità e autonomia) prima di questo corso BIM?

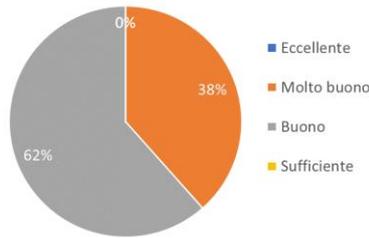


19. What overall rating would You give the course?

- a) Excellent
- b) Very good
- c) Good
- d) Fair
- e) Poor

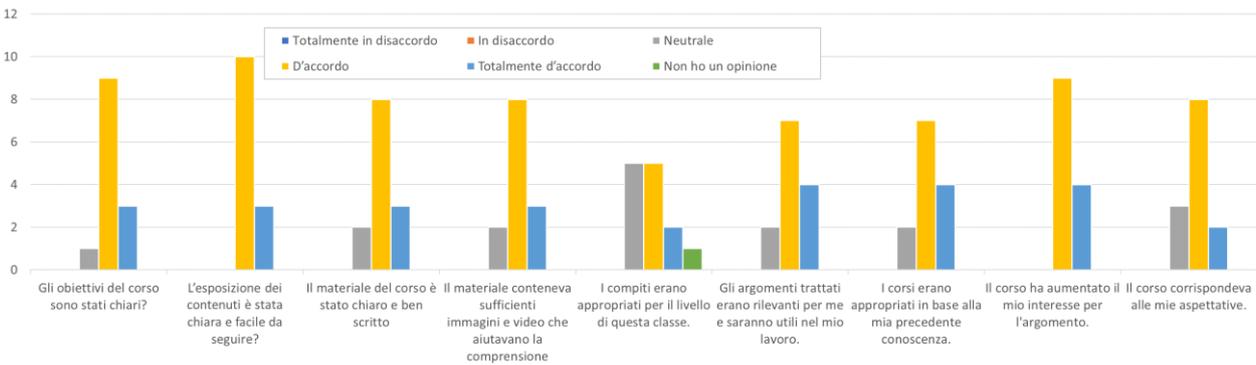


19. Quale valutazione generale daresti al corso?



20. Please indicate your level of agreement with the following statements:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	do not have opinion
The course objectives were clear.						
The content was organized and easy to follow.						
The course materials were clear and well written.						
The course materials contain sufficient number of images and videos explaining the course content.						
The assignments were appropriate for the level of this class.						
The topics covered were relevant to me and will be useful in my work.						
The coursework was appropriate to my prior knowledge.						
The course increased my interest in the subject.						
The course corresponded to my expectations.						

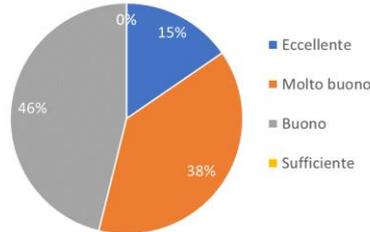


21. What overall rating would you give the trainer(s)?

- a) Excellent
- b) Very good
- c) Good
- d) Fair
- e) Poor



21. Quale valutazione generale daresti al / ai formatore / i?

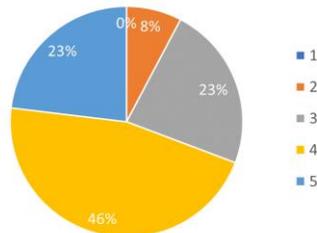


23. How much new information did you receive in the training course?

- a) 1
- b) 2
- c) 3
- d) 4
- e) 5

Rate on the scale from: 1 (none) to 5 (a lot of new information)

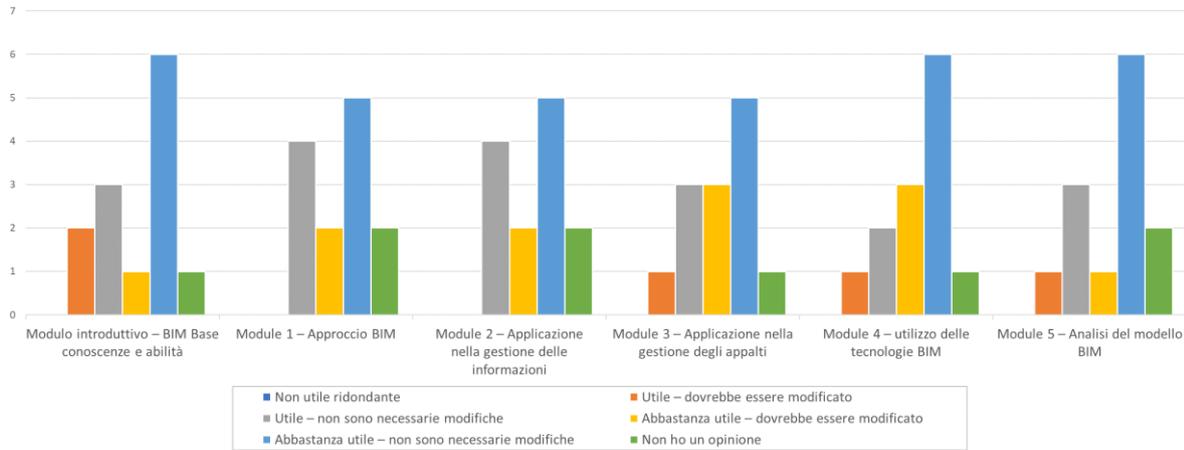
23. Quante nuove informazioni hai ricevuto nel corso di formazione?  
Valuta sulla scala da: 1 (nessuna) a 5 (molte nuove informazioni)



25. Please rate the following BIM course modules based on how they are useful and interesting to You.

	Not useful - redundant	Useful – should be amended	Useful – no changes necessary	Quite useful – should be amended	Quite useful – no changes necessary	Do not have opinion
Introductory Module – Basic BIM knowledge and skills						
Module 1 – Diffuse BIM						
Module 2 – Apply information management						
Module 3 – Apply procurement management						
Module 4 – Use BIM technology						
Module 5 – Analyse the BIM Model						

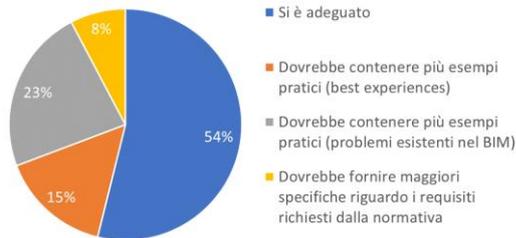




26. What do You feel, is the training material comprehensive enough?  
(Please mark all that apply)

- a) Yes, it's adequate
- b) It should contain more practical examples (best experiences)
- c) It should contain more practical examples (existing issues in BIM)
- d) It should give more country specific regulatory requirements

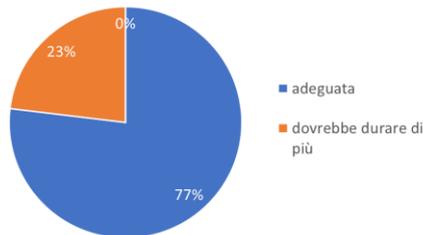
26. Il materiale didattico è abbastanza completo?



27. What do You feel about the duration of the training?

- a) It is adequate
- b) It should be longer
- c) It should be shorter

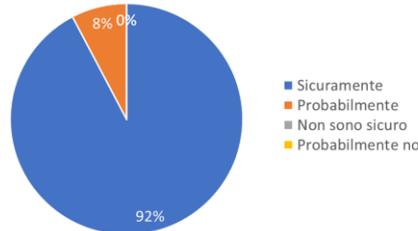
27. Che cosa ne pensi della durata del corso?



28. Would You be willing to disseminate the BIM training courses among Your contacts and associates?  
Without any obligation to do so!

a) Definitely  
b) Probably  
c) Not sure  
d) Probably not  
e) Definitely not

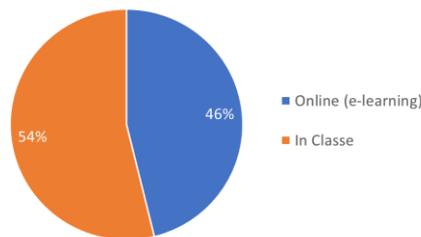
28. Saresti disposto a divulgare i corsi di formazione BIM tra i tuoi contatti e collaboratori? Senza obbligo di farlo! \*



29. Would you prefer to take this course online or in the classroom?

a) Online (e-learning)  
b) Classroom

29. Preferiresti fare il corso on-line o frontale in classe?



It is evident from the training validation results that 84 % of participants feel BIM certification, support or training would absolutely (38 %) or likely (46 %) be beneficial to their colleagues which is a good indication of their view about the necessity of certification courses. Additionally, after the course, training participants were asked to evaluate their competences prior to the classroom course on BIM. The intention was to get the information what is their initial knowledge on BIM as well as to see whether the course was an “eye opener” and comprehensive enough. The participants replied that they feel they had little (62 %) or good (23 %) and very good (8 %) competences. Since 69 % of course participants are already using BIM (or intends to use it in near future) the overall rating of the course as good (62 %), very good (38 %) is very encouraging and positive for the developed training materials and courses held in Italy. Trainers received overall rating of good (46 %), very good (38 %) and excellent (15 %) which, it has to be said should be improved in future, since on other comparable courses, more participants deemed the trainers as very good or excellent. The majority of course participants agree to the statements that the course objectives were clear with organized and easy to follow content. They mainly agree that course materials were clear and well written and contain sufficient number of images and videos explaining the course content. There were no practical assignments so there is a significant number of participants who are neutral with the claim that assignments were appropriate for the level of this class while the coursework was appropriate to their prior knowledge and the topics covered were relevant and will be useful in their future work as they received new information



(69 % of participants feel they got significant amount of new information). The course also increased their interest in the subject and corresponded to their expectations.

When getting more in depth and looking for their opinion on each of the training modules, participants feel that Introductory module and modules 1 - 5 are useful and requires no changes. Specifically, the general opinion is that training materials are adequate, but some participants (38 %) said it should contain more practical examples (best experiences and existing issues in BIM). Regarding the length of training, 77 % of training participants said that 4-hour training course is adequate, while 23 % think it should be shorter. It has to be enhanced that 54 % of course participants prefer to take this course in the classroom while 46 % of people would prefer to take it on-line which is the highest ratio of people in all countries and all training courses.

The quality of the course is best rated if training participants disseminated and recommend the course to their colleagues, friends and associates, and in the case of Italian Second Seminars with Public Administration, Owners, Tenants and Building Administrators, participants declared they would definitely (92 %) and probably (8 %) be willing to disseminate the BIM training courses among their contacts.

17

Comments and suggestions of the training participants could be summarised in the following few lines:

- Some participants declared they would like to have application practice section and the use of software
- Some participants declared they would like to have more practical case studies, major best practices, examples of procurement using the BIM

### 2.3.2 Agenda

Agenda for the Seminar with Public Administration, Owners, Tenants and Building Administrators held on July 18<sup>th</sup> 2019 in Messina, Italy

Il seminario ha l'obiettivo di presentare la metodologia del Building Information Modelling (BIM) fornendo ai partecipanti una conoscenza di base.

A seguito del nuovo DM 560/17 (Decreto BIM) e della pubblicazione delle norme UNI 11337 (2017) risulta importante conoscere il BIM e la sua applicazione e diffusione a livello nazionale ed internazionale.

Verrà presentato il progetto NET-UBIEP che ha l'obiettivo di aumentare le prestazioni energetiche degli edifici stimolando e promuovendo l'uso del BIM durante il ciclo di vita di un edificio: dalla fase di progettazione alla costruzione, gestione, manutenzione, ristrutturazione, per arrivare, infine, alla demolizione.

Per trarre tutti i benefici introdotti dal BIM occorre che tutti i tecnici della filiera delle costruzioni siano pronti ad acquisire nuove competenze che siano integrate anche con l'obbligatorietà dell'introduzione dei criteri di performance energetica degli edifici per una migliore qualità del progetto e per un costo di manutenzione e gestione inferiore.

L'uso del BIM è già un obbligo di legge così come è obbligo, per la pubblica amministrazione, fare formazioni e dotarsi di hardware e software adeguati. Al di là dell'obbligo è bene sapere che il BIM si sta diffondendo sempre più in tutti i paesi del mondo, proprio per i vantaggi che ne derivano per la sostenibilità del nostro ambiente costruito e la pubblica amministrazione ha un ruolo fondamentale nel dotarsi di strumenti per gestire un progetto digitale che può essere realizzato e condiviso con piattaforme informatiche.

NET-UBIEP promuove anche la collaborazione in tutta la filiera perché è importante che tutti i professionisti e i tecnici, che partecipano alle diverse fasi della progettazione e della realizzazione, abbiano uno specifico ruolo di raccolta, gestione e memorizzazione di tutte le informazioni necessarie, durante l'intero il ciclo di vita dell'edificio. Ogni tecnico, dipendente pubblico, progettista, costruttore, gestore di strutture o fornitore, deve dunque conoscere quali informazioni possano essere utilizzate potenzialmente da qualsiasi altro attore. Tutte le informazioni dovranno essere disponibili per tutta la vita dell'edificio anche quando il processo che l'ha generato è terminato. È quindi essenziale che tutti i diversi attori utilizzino lo stesso linguaggio, gli stessi dizionari e la stessa struttura dei dati... ecco perché la formazione è così importante!

A cura di:  
**ENEA**  
Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile

**Comune di Messina**

Anna Moreno  
Coordinatore Net-UBIEP  
Tel. +39 06 3048 6474  
[anna.moreno@enea.it](mailto:anna.moreno@enea.it)

**Segreteria Organizzativa  
Comune di Messina  
Segreteria Generale**

**NET-UBIEP**  
Network for Using BIM  
to Increase the Energy Performance

[www.net-ubiep.eu](http://www.net-ubiep.eu)

**Building Information Modelling: Innovazione e nuove frontiere per infrastrutture e città sostenibili - progetto NET UBIEP**

**18 Luglio 2019**  
Sala delle bandiere  
Palazzo Zanca  
Messina



L'ENEA in collaborazione con il Comune di Messina propone un seminario tecnico sul tema: l'importanza della formazione sul Building Information Modeling per costruire città sostenibili

Somministrazione questionario iniziale da compilare on line [www.net-ubiep.eu/it/self-assessments-5](http://www.net-ubiep.eu/it/self-assessments-5)

#### Programma della Giornata

Ore 9:00 inizio lavori

Saluti istituzionali  
Assessore all'Energia  
Dott. Arch. Ing. Salvatore Mondello

Introduzione al Workshop  
Francesco Cappello – ENEA - Dipartimento E.E. –SIST-SUD

**1. Il building information building come strumento per la sostenibilità delle nostre città**  
Il BIM non è più uno strumento per la sola progettazione di edifici, ma è il nuovo strumento per progettare, realizzare, gestire e mantenere meglio edifici e infrastrutture di superficie e del sottosuolo. In tale contesto l'uso dell'openBIM, che favorisce l'interoperabilità digitale, diventa essenziale per assicurare la gestione delle informazioni in qualsiasi ambito settoriale, geografico e temporale.  
Anna Moreno, Enea

**2. L'Ambiente della Condivisione dei Dati (ACDat) per la gestione del flusso informativo del processo BIM**  
L'Ambiente di Condivisione dei Dati favorisce il dialogo tra tutti gli attori senza perdita d'informazioni ma anche senza ridondanze e evitando incomprensioni: **NORMATIVA E CASO STUDIO**  
Interoperabilità e metodi di comunicazione in ACDat tra Cantiere e Ufficio di Progettazione nelle fasi di digitalizzazione As-Built  
Andrea Ferrara – MUSA Progetti.

**3. Applicazione del BIM nei contratti di rendimento energetico e gestione degli immobili per ridurre i consumi e produrre energia da fonti rinnovabili integrate nell'edificio.**

La modellazione BIM permette di avere uno strumento utile per valutare l'opportunità di una riqualificazione più o meno profonda di un edificio riuscendo a calcolare i tempi di ritorno con certezza dei risultati utilizzando gli incentivi fiscali oggi disponibili: Eco bonus e Sisma bonus.  
Guido Di Rosa Global Power Service

**4. Progettare gli impianti per il miglioramento della performance energetica utilizzando il BIM:**  
Un'applicazione alla scuola delle energie dell'ENEA.  
Per progettare e riqualificare un edificio esistente, il BIM può essere utilizzato per visualizzare i diversi interventi e scegliere quello ottimale. Il BIM, in questo caso, non solo permette di simulare le diverse soluzioni calcolando i tempi di ritorno dell'investimento, ma serve anche come strumento di comunicazione con i clienti finali essendo la visualizzazione dei modelli BIM molto più "friendly" di qualsiasi relazione tecnica.  
Anna Moreno, Enea

**5. Esperienze BIM sul territorio siciliano**  
Recupero e riqualificazione edificio Ex-Albergo Scuola di Siracusa  
Diagnosi energetica BIM (Municipio di Mineo (CT))  
Andrea Ferrara – MUSA Progetti

**6. Gli oggetti BIM e i voucher per la costruzione di "cataloghi regionali"**  
Per una progettazione con criteri ambientali minimi è opportuno avere cataloghi BIM dei prodotti locali in modo che progettisti e costruttori possano progettare e realizzare edifici con prodotti a Km zero e i proprietari possano più facilmente provvedere alla gestione e alla manutenzione degli impianti degli edifici accedendo alle informazioni con l'uso di un tablet e qualche click.  
Anna Moreno ENEA

Ore 12:30  
Somministrazione questionario finale da compilare on line [www.net-ubiep.eu/it/assessments-5](http://www.net-ubiep.eu/it/assessments-5)

Dibattito Finale

Nota bene

Per poter usufruire del corso net-UBIEP bisogna partecipare al sondaggio che si trova al seguente link:

<http://www.net-ubiep.eu/it/users-classes-5/>

e iscriversi al sito [www.net-ubiep.eu](http://www.net-ubiep.eu)

Nello stesso sito è possibile scaricare gratuitamente il materiale informativo per le pubbliche amministrazioni ed altri target.  
Si prega la più ampia diffusione.

## 2.4 Lithuania

### 2.4.1 Course description and results

Second Seminar with Public Administration, Owners, Tenants and Building Administrators was organized on **April 4<sup>th</sup> 2019** in Klaipėda, Lithuania.

The course programme consisted of 4 academic hours combining theoretical part with application examples (case studies) and practical tasks.

A group of **38 participants** which work in public administration are building owners, tenants or building administrators had undertaken the classroom course in Lithuania within the framework of the Net-UBIEP project.

The overview of the partners and methodological basis of the classroom courses is shown in the figure below.





Prepared by: Doc. Dr. Vaidotas Šarka (VŠĮ „Skaitmeninė statyba“); Doc. Dr. Tatjana Vilutienė (Vilnius Gediminas Technical University)

Several photos from the Second Seminar with Public Administration, Owners, Tenants and Building Administrators conducted by the **Dig.Con.** can be found bellow.



Pre- and Post-training questionnaires were translated to Lithuanian language but only pre-training questionnaire was filled by training participants. For the reason of lacking post-training questionnaire results validation of this specific classroom course cannot be completed.

Analysis of the training results, problems and solutions together with lessons learned during the courses are as follows:

- The duration of seminars – 4 hours. Participants of the seminars have confirmed that duration is appropriate.
- 8 lecturers made presentations at the seminars.
- Theory was combined with application examples (case studies): 50 % – theory, 50 % – real cases.



- It was the problem to fill the questionnaires during the short time of seminar. It was quite difficult to attract the participants to “future” construction related topics. Seminars were attended by representatives of more than 40 organizations (including municipalities).
- In seminars participated about 30 percent less than registered. To attract the required number of participants it is necessary to register about 30% more potential participants.

## 2.4.2 Agenda



Seminaras „Kaip efektyviai projektuoti ir statyti bei naudoti energijos beveik nenaudojančius (angl. NZEB) tvarius pastatus, taikant statinių informacinio modeliavimo (BIM) metodiką“.

Net-UBIEP 2-asis seminaras viešojo sektoriaus organizacijoms, užsakovams, naudotojams, pastatų priežiūros organizacijoms (WP4)

Data: 2019-04-04 (ketvirtadienis), 13:00-17:30 val. (registracija nuo 12:30)

Vieta: Klaipėda, Klaipėdos Švyturio arena, Dubysos g. 10., 2-oje seminarų salėje. Parodų „Energetika 2019“ ir „Statyba 2019“ metu.

SEMINARO PROGRAMA		
Laikas	Tema	Pranešėjas
12:30-13:00	Registracija / sutikimo kava	
13:00-13:10	Sveikinimo žodis, seminaro tikslai.	Dalius Gedvilas (VšĮ „Skaitmeninė statyba“)
13:10-13:30	Kas yra BIM ir kodėl BIM? vertė tvarumui ir energinio efektyvumo užtikrinimui. Jūsų vaidmuo BIM projektuose.	Edita Šarkienė (Vilniaus Gedimino technikos universitetas)
13:30-13:50	BIM projekto planavimas ir valdymas energinio efektyvumo didinimui. Kas yra EIR ir BEP? kodėl svarbu parengti racionalų EIR?	Arvydas Kiaulakis (VšĮ Skaitmeninė statyba)
13:50-14:10	BIM įrankiai ir formatai. Open BIM. Duomenų mainų ir bendradarbiavimo aplinka (CDE).	Vaidotas Šarka (VšĮ „Skaitmeninė statyba“)
14:10-14:30	BIM taikymo efektyvumo matavimai statinio gyvavimo cikle.	Tatjana Vilutiene (Vilniaus Gedimino technikos universitetas)
14:30-14:50	Kaip esame pasirengę energijos beveik nenaudojančių pastatų (NZEB) projektavimui ir statybai? kokie racionalūs NZEB parametrai?	Prof. Vytautas Martinaitis (Vilniaus Gedimino technikos universitetas)
14:50-15:10	Kavos pertraukėlė / komunikavimas	
15:10-15:30	Valstybės turto valdymo lūkesčiai ir tendencijos. Didžiausio šalies užsakovo tikslai ir veiklių optimizavimo planai, taikant skaitmenines priemones.	Audrius Tamolis (Turto bankas)
15:30-15:50	Projektavimo naujos galimybės ir iššūkiai taikant BIM energinio efektyvumo kontekste. Praktika	Dainius Gudavičius (Projektavimo įmonių asociacija)
15:50-16:10	Energinis efektyvumas ir BIM. Iššūkiai ir galimybės. Praktika	Remigijus (Nacionalinė pasyvaus namo asociacija) Simanavičius
16:10-16:30	BIM - naujos energinio efektyvumo didinimo galimybės. Praktika	Audrius Leonavičius (YIT Kausta)
16:30-17:00	Klausimai / Diskusija	
17:00	Renginio pabaiga	

Net-UBIEP: D4.6-D26LT Second Seminar with Public Administration and Owners, Tenants and Building Administrators. This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 754016. This deliverable reflects only the author's view. The Agency is not responsible for any use that may be made of the information it contains.



Daugiau informacijos:

1. Apie net-UBIEP projektą: <http://www.net-ubiep.eu/tr/home-iv/> (kviečiame užsiregistruoti ir gauti naujienas)
2. Apie BIM metodikos taikymą: [www.skaitmeninestatyba.lt](http://www.skaitmeninestatyba.lt)
3. Apie statybų sektoriaus e-kompetencijų registrą: [www.statreg.lt](http://www.statreg.lt)
4. Apie A, A+, A++ ir NZEB pastatų statybos technologijas: [www.statybostaisykles.lt](http://www.statybostaisykles.lt) statybos taisyklių ir ENERGOTRAIN skiltis

Renginio organizatoriai:



Renginio partneriai:



Net-UBIEP: D4.6-D26LT Second Seminar with Public Administration and Owners, Tenants and Building Administrators. This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 754016. This deliverable reflects only the author's view. The Agency is not responsible for any use that may be made of the information it contains.

## 2.5 Slovakia

### 2.5.1 Course description and results

On **25 April 2019**, the second Net-UBIEP seminar for public administration, owners, tenants and building managers took place in Bratislava, Slovakia.

Slovak partners have set up the Net-UBIEP School of BIM in Slovakia. The training provided by the school is modular and open to further new modules. At present they have established 7 modules:



- MU1 - Basic module for public authorities;
- MU2 - basic module for owners of buildings;
- MU3 - basic module for facility managers;
- MP1 - basic module for professionals;
- MP2 - working with the software for BIM (for professionals);
- MP3 - planning fire protection in BIM (for professionals);
- MT1 - module for technicians and craftsmen;
- Certification module – under development - will be clarified as we have more details of using bSI platform.

During the classroom courses, Slovak partners were testing these modules:

- 1st seminar for PA, owners and facility managers (25 October 2018) and in second seminar for PA, owners and facility managers (25 April 2019);
- 1<sup>st</sup> and 2<sup>nd</sup> training sessions for professionals (1 - 2 April 2019);
- third training session for professionals (23-24 May 2019);
- in-class training for technicians (28 March 2019) - they had to organise the training for technicians in-class, as reading the information material using e-learning would be not enough for them and Slovak partners were delivering through this session practical demonstrations for augmented reality using phones, tablets and 3D-glasses; and they could personally test working with 3D-glasses (this exercise was prepared by a company affiliated to the school).

The Net-UBIEP School of BIM is supported by affiliates that include: construction association, Chamber of Architects, training institute, providers of software (for the moment only Revit, but others are interested to come), many technical companies that are providing BIM related services (mostly SMEs) for integrated planning, construction and facility management (still we have to cover liquidation and recycling), architect studios.

These affiliates provide input to the training, provide speakers, equipment for practical demonstrations and exercises (Slovak partners have established a rule that they are neutral in respect of brand - so no company presentations allowed) etc. The network is growing.

Certainly, this school will continue to work beyond expiry of the project and they already have many plans with their affiliates.

The course programme for public administration, owners, tenants and building managers consisted of 6 academic hours combining theoretical part with application examples (case studies).

A group of **13 participants** specialising in architecture and engineering had undertaken the classroom course in Slovakia within the framework of the Net-UBIEP project.

Main objectives of the seminar:

- Present the most important elements of the BIM system and the benefits of this way of visualisation for public administrations, landlords, tenants and building managers;
- Explain how the use of BIM can contribute to efforts to improve the energy performance of buildings, during procurement, the authorization process and in particular during in-service management;
- Discuss the necessary education and innovation activities to support the implementation of BIM in the construction sector.

Individual objectives of the seminar:

- Dialogue between the state administration, public administration and the main stakeholders in the construction sector on the implementation of BIM in Slovakia;
- Presentation of past achievements in implementation and main objectives in the medium term;
- Agreement on further cooperation in activities supporting BIM implementation in Slovakia.

Main topics, focus which were discussed in more detail:

- Government strategy and objectives in the medium term in the implementation of BIM;
- Construction sector strategy and objectives in the medium term in the implementation of BIM;
- BIM implementation working groups and their achievements to date;
- Challenges of BIM implementation in Slovakia and cooperation on their management.

Learning outcomes from the 3D Net-UBIEP competence model

- PA.LO1. Identifying the benefits of using BIM during the building life cycle;
- PA.LO2. Model quality assurance through the use of building model control software;
- PA.LO3. Setting requirements for the management, coordination and storage of energy performance data in CDE;
- PA.LO4. Use of free apps and technologies to control model quality

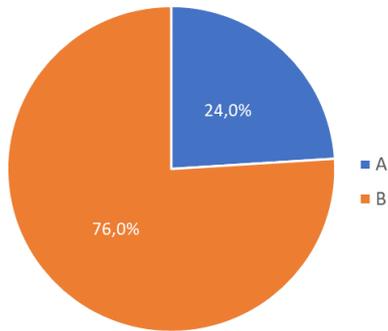
Several photos from the First Seminar with Public Administration, Owners, Tenants and Building Administrators conducted by the **ViaEuropa Competence Centre and UVS** can be found bellow.



Pre- and Post-training questionnaires were translated to Slovak language and filled by training participants. Few general conclusions from the classroom course validation from the participants in Slovakia is given below, while the entire questionnaire analysis is performed in deliverable *D27-D4.7 Survey and or interview among all different Targets*. Due to the fact that validation was performed in partners' native language, the analysis below has both English questions and the same questions in native language.

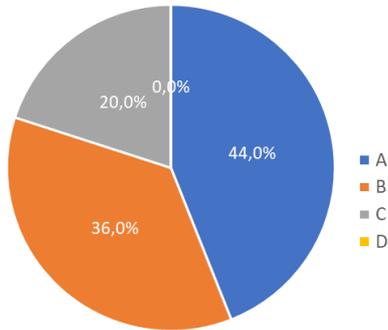
1. Do You or Your company/organization currently use BIM, or is it intending to use BIM in the near future?
- a) Yes
  - b) No





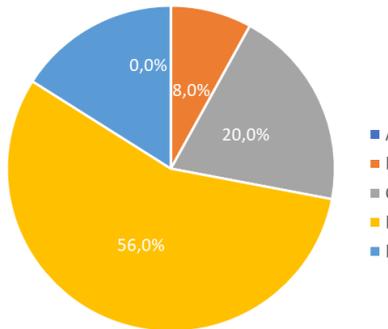
15. Would BIM certification, support or training, benefit Your colleagues?

- a) Absolutely
- b) Likely
- c) Possibly
- d) No



18. In retrospective, how do You rate Your competences (knowledge, skills, responsibility and autonomy) before this BIM course?

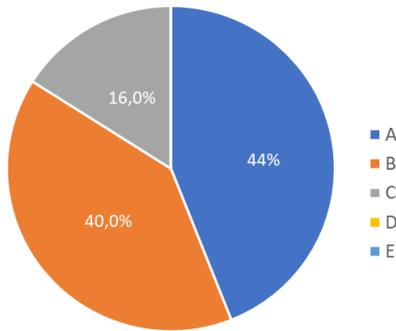
- a) Excellent
- b) Very good
- c) Good
- d) Little
- e) I don't know



19. What overall rating would You give the course?

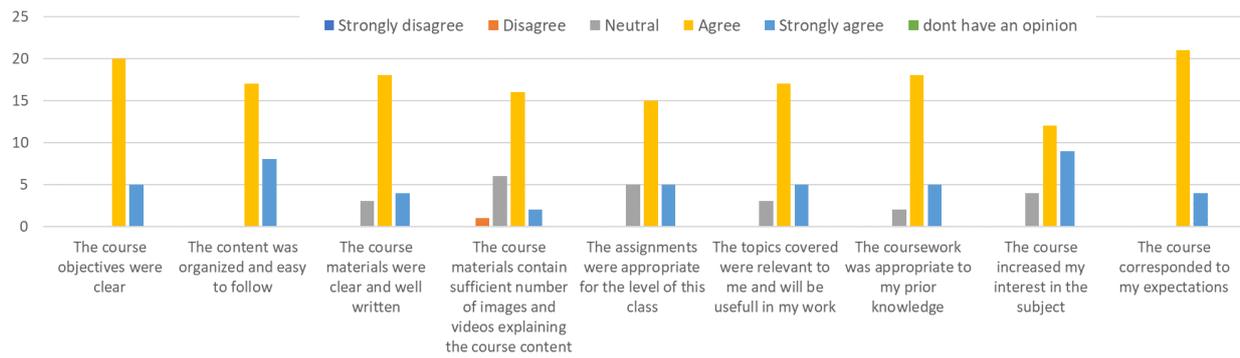
- a) Excellent
- b) Very good
- c) Good
- d) Fair
- e) Poor





20. Please indicate your level of agreement with the following statements:

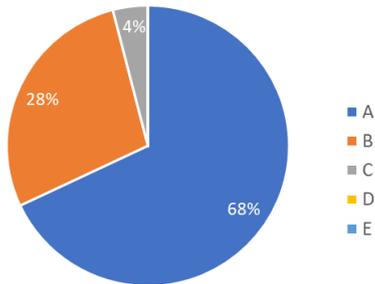
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	do not have opinion
The course objectives were clear.						
The content was organized and easy to follow.						
The course materials were clear and well written.						
The course materials contain sufficient number of images and videos explaining the course content.						
The assignments were appropriate for the level of this class.						
The topics covered were relevant to me and will be useful in my work.						
The coursework was appropriate to my prior knowledge.						
The course increased my interest in the subject.						
The course corresponded to my expectations.						



21. What overall rating would you give the trainer(s)?

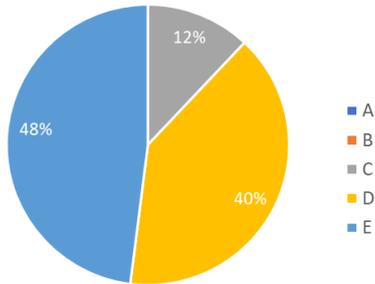
- a) Excellent
- b) Very good
- c) Good
- d) Fair
- e) Poor





23. How much new information did you receive in the training course?  
 Rate on the scale from: 1 (none) to 5 (a lot of new information)

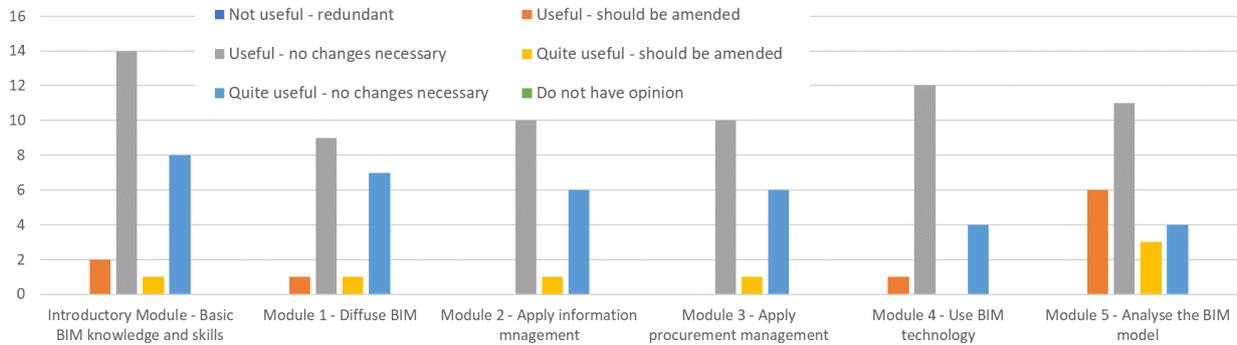
a) 1  
 b) 2  
 c) 3  
 d) 4  
 e) 5



25. Please rate the following BIM course modules based on how they are useful and interesting to You.

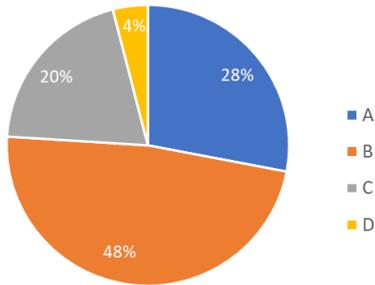
	Not useful - redundant	Useful – should be amended	Useful – no changes necessary	Quite useful – should be amended	Quite useful – no changes necessary	Do not have opinion
Introductory Module – Basic BIM knowledge and skills						
Module 1 – Diffuse BIM						
Module 2 – Apply information management						
Module 3 – Apply procurement management						
Module 4 – Use BIM technology						
Module 5 – Analyse the BIM Model						





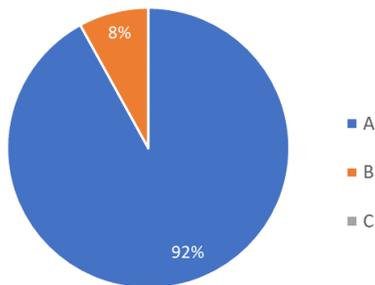
26. What do You feel, is the training material comprehensive enough?  
(Please mark all that apply)

- a) Yes, it's adequate
- b) It should contain more practical examples (best experiences)
- c) It should contain more practical examples (existing issues in BIM)
- d) It should give more country specific regulatory requirements



27. What do You feel about the duration of the training?

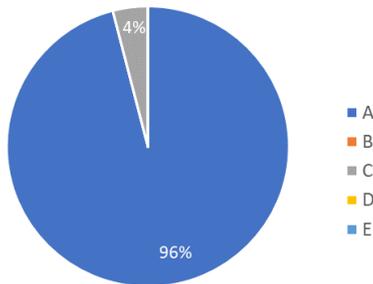
- a) It is adequate
- b) It should be longer
- c) It should be shorter



28. Would You be willing to disseminate the BIM training courses among Your contacts and associates?  
Without any obligation to do so!

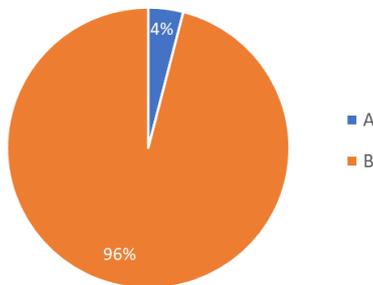
- a) Definitely
- b) Probably
- c) Not sure
- d) Probably not
- e) Definitely not





29. Would you prefer to take this course online or in the classroom?

a) Online (e-learning)  
b) Classroom



It is evident from the training validation results that 80 % of participants feel BIM certification, support or training would absolutely (44 %) or likely (36 %) be beneficial to their colleagues which is a good indication of their view about the necessity of certification courses. Additionally, after the course, training participants were asked to evaluate their competences prior to the classroom course on BIM. The intention was to get the information what is their initial knowledge on BIM as well as to see whether the course was an “eye opener” and comprehensive enough. The participants replied that they feel they had little (56 %) or good (20 %) and very good (8 %) competences while 16 % don’t know what are their competences. Since 76.0 % of course participants are not using BIM this was to be expected for the case of Slovakia. The overall rating of the course as good (16 %), very good (40 %) and excellent (44 %) is very encouraging and positive for the developed training materials and courses held in Slovakia. Trainers received positive overall rating of very good (28 %) and excellent (68 %).

The majority of course participants agree to the statements that the course objectives were clear, with organized and easy to follow content. They mainly agree that course materials were clear and well written and contain sufficient number of images and videos explaining the course content. The positive validation of the Slovak course is also evident from the fact that the majority of participants agree that assignments were appropriate for the level of this class (appropriate to their prior knowledge) and the topics covered are relevant and will be useful in their future work as they received new information (88 % of participants feel they got significant amount of new information). The course also increased their interest in the subject and corresponded to their expectations.

When getting more in depth and looking for their opinion on each of the training modules, participants feel that Introductory module, Module 1 -5 are useful or quite useful and no changes are necessary even though there are some participants that feel Module 5 should be amended. On the other hand, significant number of course participants declared more practical examples are needed (best experiences and existing issues in BIM), 48 % and 20 % respectively, while only 28 % declared that existing training materials are adequate.



Regarding the duration of training, 92 % of training participants said that 6-hour training course is adequate, while 8 % think it should be longer. It has to be enhanced that 96 % of the course participants prefer to take this course in the classroom while only 4 % would prefer to take it on-line.

The quality of the course is best rated if training participants disseminated and recommend the course to their colleagues, friends and associates, and in the case of Slovak classroom course for public administration, owners, tenants and building managers, 96 % of participants declared they would be definitely willing to disseminate the BIM training courses among their contacts.

### 2.5.2 Agenda

#### 4. Program

DOPOLUŇNÁJŠÍ PROGRAM		
Čas	Téma a prednášajúci	Forma a metódy
	Úvod	
10:00	Úvod do Net-UBIEP projektu <i>RNDr. Ing. František Doktor, ViaEuropa Competence Centre</i>	Powerpoint prezentácia
10:30	BIM pre verejnú správu • Územné plánovanie • Povoľovanie stavieb • Správa verejných budov <i>Ing. Marta Minarovičová, UVS</i>	Powerpoint prezentácia
11:15	Net-UBIEP BIM akadémia <i>RNDr. Ing. František Doktor, ViaEuropa Competence Centre</i>	Posterová prezentácia
	Prvá časť: Stratégia stakeholderov pre implementáciu BIM	
11:45	Stratégia štátnej správy a ciele v strednodobom horizonte pri implementácii BIM <i>Ing. Ján Černák, CSc, Ministerstvo dopravy a výstavby SR</i> Stratégia stavebného sektora a ciele v strednodobom horizonte pri implementácii BIM <i>Ing. Marek Malina, PhD, ZSPS</i>	Powerpoint prezentácia
12:30	Prestávka na občerstvenie	
	Druhá časť: Stav implementácie BIM na Slovensku	
13:00	• Skúsenosti BIM asociácie; • Výsledky prieskumu o využití BIM na Slovensku; • Možnosti spolupráce. <i>doc. Ing. Ján Erdélyi, SvF STU Bratislava</i>	Powerpoint prezentácia
	Tretia časť: Spolupráca na implementácii	
13:45	Diskusia	
15:00	Záverečné zhrnutie. <i>Ing. Marta Minarovičová, UVS</i>	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.754016



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## 2.6 Spain

### 2.6.1 Course description and results

First Seminar with Public Administration, Owners, Tenants and Building Administrators was organized on **October 17<sup>th</sup> 2018** in Madrid, Spain.

A group of **24 participants** which work in public administration are building owners, tenants or building administrators had undertaken the classroom course in Spain within the framework of the Net-UBIEP project.

Several photos from the Second Seminar with Public Administration, Owners, Tenants and Building Administrators conducted by the FLC can be found bellow.



Pre- and Post-training questionnaires were translated to Spanish language but only pre-training questionnaire was filled by training participants. Since Spanish partners agreed that the post – training questionnaires were quite similar, training participants did not provide any answer to them.

For the reason of lacking post-training questionnaire results validation of classroom courses held in Spain cannot be completed.

### 2.1.2 Agenda





SECRETARÍA DE ESTADO  
INFRAESTRUCTURAS, TRANSPORTE Y  
VIVIENDA  
DIRECCIÓN GENERAL  
DE ARQUITECTURA, VIVIENDA Y SUELO  
SUBDIRECCIÓN GENERAL DE  
ARQUITECTURA Y EDIFICACIÓN

Reunión: 2/18 de la SACE  
Hora y fecha: 17 de octubre de 2018, a las 10.00 h.  
Lugar: Sala de Juntas. Segunda planta. Consejería de Transportes, Vivienda e Infraestructuras. Comunidad de Madrid. c/ Maudes 17. Madrid

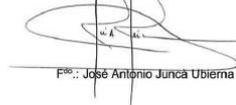
Reunión 2/18 de la Subcomisión Administrativa para la Calidad de la Edificación, SACE

#### Orden del Día

1. Bienvenida y apertura de la reunión a cargo de la Presidenta de SACE
2. Relación de asistentes
3. Adopción del Orden del Día
4. Lectura y aprobación, si procede, del Acta de la reunión anterior
5. Informe de la Secretaría de la SACE
6. Informe de la Secretaría General Técnica del Ministerio de Fomento
7. Informe de la Dirección General de Arquitectura, Vivienda y Suelo
8. Informe de los representantes de las CCAA
9. Informe de los Comités y grupos de trabajo
10. Presentación nuevo proyecto EILA, sometiéndolo a su aprobación
11. Presentación del proyecto Net UBIEP
12. Ruegos y preguntas
13. Acuerdo de lugar y fecha de la próxima reunión.

Madrid, 19 de septiembre de 2018

El Secretario de la SACE



Fdo.: José Antonio Juncá Ubierna

PASEO DE LA CASTELLANA, 67  
28071 MADRID

## 2.7 The Netherlands

### 2.7.1 Course description and results

First Seminar with Public Administration, Owners, Tenants and Building Administrators was organized on **November 6<sup>th</sup> 2019** in Almelo, The Netherlands.

The course programme consisted of 3 academic hours of theoretical lectures.

A group of **10 participants** which work in public administration are building owners, tenants or building administrators had undertaken the classroom course in The Netherlands within the framework of the Net-UBIEP project.

The Dutch partners provided an explanation why there were only several participants for the professional trainings. Dutch partners are trying to get more people interested in the professional training via the professional networks of ISSO, B&R, TVVL, the NetUBIEP website, LinkedIn and BIMloket, but so far, we had little success.

The reasons for this are:

- A large part of the Dutch construction sector has already some professional education or knowledge on BIM. Also, professionals are already trained in some degree on nZEB in the last years. Added value



of Net-UBIEP project is to create a link between these subjects. However, it is very difficult to convey possible participants of this added value.

- Lack of time: the Dutch construction sector is at its peak. Moreover, employees are scarce at the moment. Therefore, the existing workforce is very busy with their construction projects instead of educating themselves. To solve this, we are building an e-learning module for professionals so people can follow the course at their convenience.
- Legislation (NTA8800/BENG) in The Netherlands about nZEB is changing in 2018 and 2019 and is not yet final. A lot of the workforce is waiting with training until there is more clarity about the legislation. After this we expect things will go faster.

In other words, things are going slower than expected. However, Dutch partners are trying to disseminate the results and the education material with professional educators who expressed interest. So, they think the results and materials will be used by these professional educators, but this is a slow process.

A photo from the Second Seminar with Public Administration, Owners, Tenants and Building Administrators conducted by **ISSO** can be found below.



Pre- and Post-training questionnaires were translated to Dutch language and filled by training participants. Dutch partners used Googleforms version of questionnaires for the course validation.

For the reason of lacking post-training questionnaire results validation of Second Seminar with Public Administration, Owners, Tenants and Building Administrators held in The Netherlands cannot be completed.

### 2.7.2 Agenda



**Regionaal ICT Beraad regio 7**  
**woensdag 6 november 2019**

**Locatie: Gemeentehuis Almelo,**  
**Haven Zuidzijde 30, 7607 EW Almelo**

**Agenda:**

9.30 – 10.00 Inloop en koffie

10.00 – 10.10 Welkom en mededelingen

10.10 – 12.00 **1e Themadeel: Routekaart BIM voor gemeenten.**

Een presentatie over BIM - het Bouwwerk Informatie Model – vanuit het Europese kennisproject Net-UBIEP

In een BIM, een digitaal bouwwerkinformatiemodel, worden alle gegevens over een bouwwerk geïntegreerd opgeslagen en verwerkbaar gemaakt. Aan een BIM en zijn componenten kunnen andere informatieobjecten gekoppeld worden zoals GIS-bestanden, specificaties en contracten. De mogelijkheden rondom BIM zijn via een pilotstarter 'Routekaart BIM voor gemeenten', door de VNG onderzocht.

**2e Themadeel: 'bijpraten' over de Wet open overheid.**

Naar verwachting zal dit najaar de Wijzigingswet open overheid door de tweede kamer worden besproken. De kern van de wet is dat overheidsorganisaties verplicht zijn om meer categorieën documenten actief openbaar te maken.

Waar moeten we aan denken bij deze nieuwe wet? In dit themadeel wordt ingegaan op verschillende aspecten van de WOO, zoals:

- Actieve openbaarmaking
- Aansluiten bij Platform Openbare Overheidsinformatie (PLOOI) van het Kennis- en Exploitatiecentrum voor Officiële Overheidspublicaties (KOOP)
- Vervroegde overbrenging in de praktijk
- Inpassen applicaties openbaarmaking binnen de gemeentelijke architectuur
- Duurzame toegankelijkheid en openbaarheid met 'archiving/open by design'
- Informatiehuishouding op orde

*Tussendoor koffie/thee pauze*

12.00 – 12.15 Terugkoppeling/bespreking Landelijk ICT Beraad  
- input ophalen voor komende vergadering Landelijk ICT beraad

Mededelingen van Centric en Pink Roccade LG

Rondvraag en thema / locatie volgend overleg

12:15 - 13.00 Lunchpauze

Vanaf 13.00 VNG-programma



This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement N° 754016.

This deliverable reflects only the author's view. The Agency is not responsible for any use that may be made of the information it contains.

The present deliverable will be update during the project in order to align the outcome to the market needs as well as to other BIM related projects realized within Horizon 2020 program.

The updated version of the deliverable will be only available in the website of the project [www.net-ubiep.eu](http://www.net-ubiep.eu).

Some deliverables could also be translated in partners national languages and could be find in the respective national web pages. Click on the flags to open the correspondence pages:



International web page



Italian web page



Croatian web page



Slovak web page



Spanish web page



Dutch web page



Estonian web page



Lithuanian web page

